

Businesses have rapidly adopted new technologies and new ways of working in response to the massive disruptions caused by the pandemic. A CEP report by **Capucine Riom** and **Anna Valero** suggests that if such innovation continues, it could boost the UK economy in the long term.

Innovation in the time of Covid-19



In a new survey of UK businesses, we report large-scale adoption of new technologies and practices during the first few months of the Covid-19 crisis, as firms transformed to survive. Will these innovations be permanent and productivity-enhancing – and how can policy support continued adoption into the recovery?

During the 2008 global financial crisis, a sharp fall in innovative activities occurred in almost every sector and region of the UK. Longer-term investments in innovation – such as research and development activities – have been disrupted due to Covid-19, and financing constraints are likely to harm these into the future.

But the unique nature of the current crisis has forced many firms to make rapid changes to their ways of working, and to adopt new digital technologies or management practices considered to be productivity-enhancing in normal times. If such innovation persists, it could induce lasting impacts on business performance and productivity.

We present new data from a survey of 375 UK businesses conducted in July 2020 in partnership with the Confederation of British Industry (CBI). Our survey sheds light on three questions:

- To what extent have businesses adopted new technologies, capabilities

and management practices, or introduced new products in response to the Covid-19 crisis – and how do these vary by type of business?

- Where firms have discovered new ways to harness technologies, what have been the impacts on business performance so far – and how do firms expect these to affect their workforces over time?

- What policies are viewed by businesses as being valuable for supporting continued innovation into recovery?

The majority of firms have adopted productivity-enhancing technologies and practices, or introduced new products and services

We asked firms whether they had engaged in four different types of innovation in the period from the end of March to the end of July 2020.

The first three relate to ‘process innovation’: the adoption of new digital technologies (for example, customer relationship management systems and remote working technologies), digital capabilities (for example, e-commerce and cybersecurity) or management practices within the organisation (for example, new human resources and people management practices).

We also asked firms if they had

introduced any new products or services, which we refer to as ‘product/service innovation’.

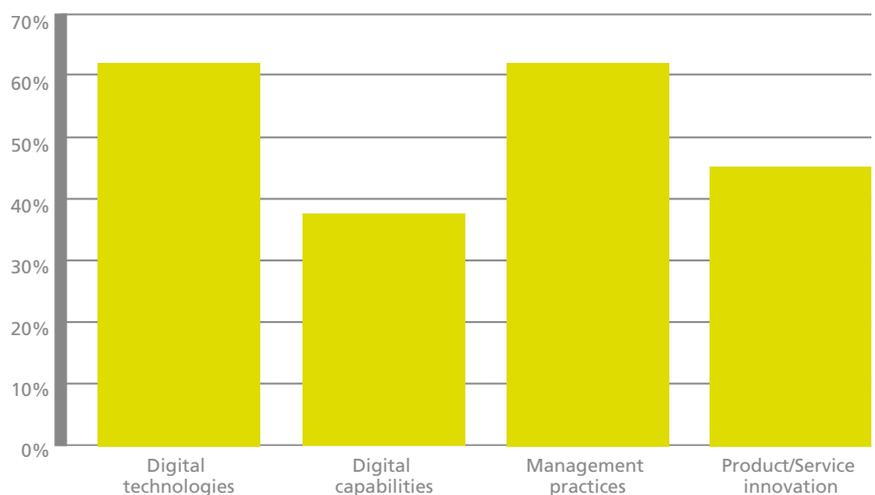
We find a strong business response to the Covid-19 crisis across the four innovation categories (see Figure 1). Over 60% of respondents have adopted digital technologies and new management practices during the crisis, and 38% have adopted new digital capabilities. Of the non-adopters, one-third plan to adopt new digital technologies or capabilities in the near future, and 20% plan to adopt new management practices.

With respect to product innovation, 45% have introduced a new product or service, with 75% of these firms saying that they have introduced entirely new products or services, and nearly 60% improving existing products or services.

These innovation rates are greater than what we might have expected in the absence of the Covid-19 crisis. The most recent UK Innovation Survey found that around 13% of businesses were process innovators and 18% were product innovators over the three years to December 2018.

Moreover, the technological response to Covid-19 so far appears to be larger than that following the global financial crisis: data from the Workplace Employment Relations Study in 2011

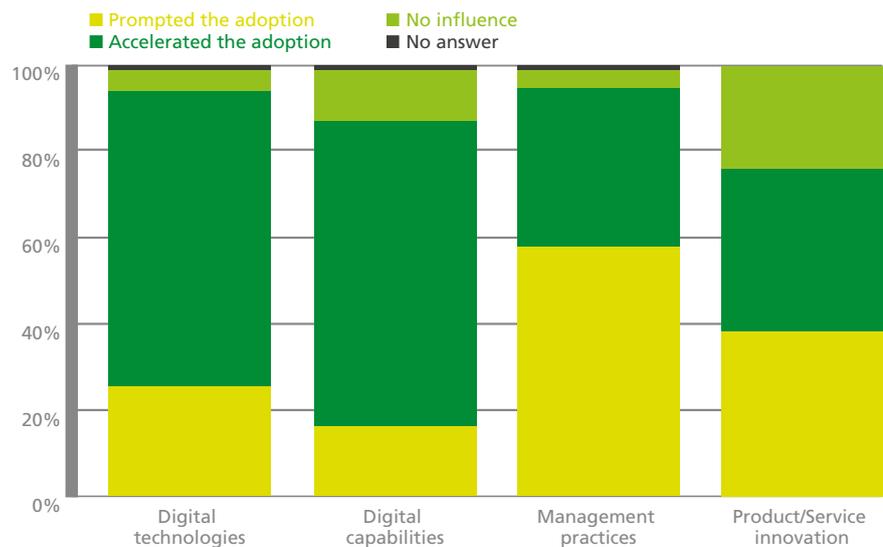
Figure 1: Innovation responses to Covid-19 (March to July 2020): shares of surveyed firms adopting new technologies, capabilities and management practices, and introducing new products and services



Note: N=375, N=374, N=371 and N=365 responded to each question, respectively.

A survey of UK firms reveals greater innovation rates than might have been expected in the absence of Covid-19

Figure 2:
Influence of Covid-19 on innovation



Notes: N=231, N=139, N=225, N=163 (those who adopted) in each column, respectively.

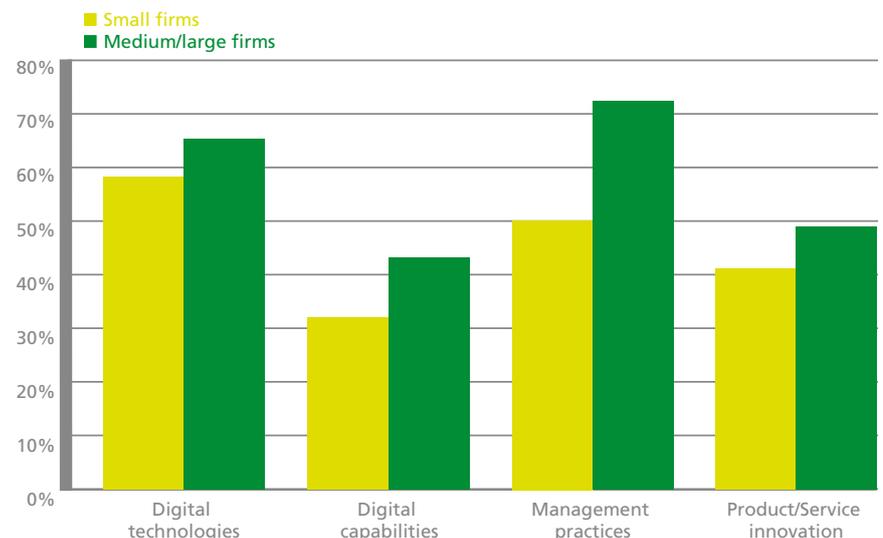
Nine out of ten UK firms say that new ways of working are here to stay after the pandemic

showed that 48% of employers had introduced or upgraded technologies, 38% had introduced changes in workplace organisation and one-third had introduced new products and services over the two years prior to the survey.

Of the innovating firms in our survey, the vast majority say that Covid-19 has accelerated or prompted these activities (see Figure 2).

We also explore how adoption patterns vary by firm type. In general, smaller firms (those with fewer than 50 employees) are less likely to have innovated (see Figure 3).

Figure 3:
Innovation rates by firm size band



Notes: N=375, N=374, N=371 and N=365 responded to each question.

In analysis where we control for key business characteristics including size, we find that firms that had previously adopted digital technologies are significantly more likely to have adopted new technologies, capabilities and practices, and to have introduced new products. London-based businesses are more likely to have adopted digital technologies, but there is no clear regional pattern to innovation in other measures.

Firms expect that their innovations will outlive the crisis and raise the productivity of workers or allow a reallocation of tasks, rather than substitute workers

The question is whether such changes will be temporary or whether they represent more permanent changes that could improve performance beyond the immediate crisis. Over 90% of adopting firms across the four types of innovation report that they intend to continue with these innovations. In addition, across the four types of innovation, around three-quarters of innovating firms consider that innovation has had a positive impact on profitability. Only a small minority (1-10%) report a negative impact.

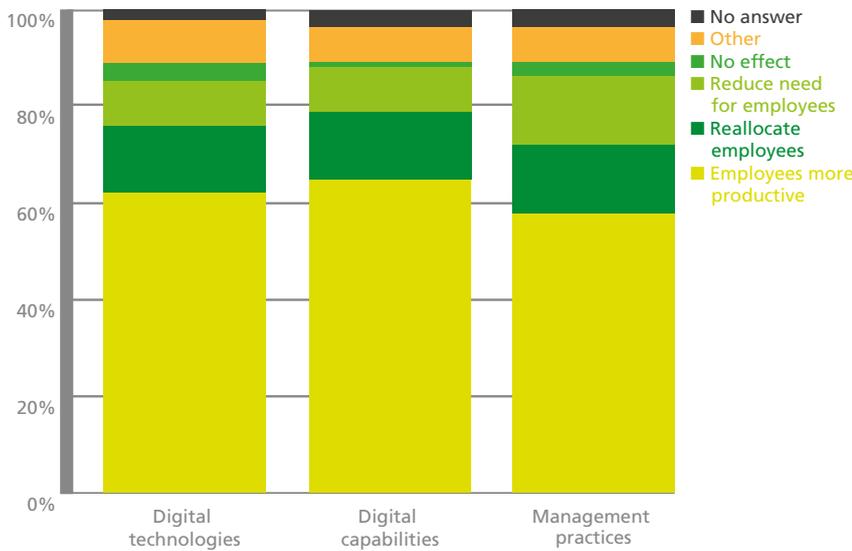
In the case of the adoption of new technologies, capabilities or management practices, we asked about business expectations about the impact of continued adoption on their existing workforce. Most firms expect that continuing to employ such process innovations will increase the productivity of employees in their current tasks or allow employees to be allocated to more productive tasks (see Figure 4).

Only a minority (10-15%) consider that such process innovation will imply a reduced need for employees over time. This suggests that the types of technologies or practices in question are not, for the most part, considered by firms to be labour-replacing. Among those that answered 'other', many highlight benefits for employees due to the increased workforce flexibility resulting from technology adoption.

New financial incentives are the most popular policy to support continued innovation adoption

Firms rank macroeconomic uncertainty and financing constraints as the two largest

Figure 4:
Expected workforce impacts of continuing process innovation



barriers to investment in new technologies and practices. The two policies considered most useful to support innovation adoption are new tax incentives and business grants or vouchers (see Figure 5).

Smaller firms in particular welcome the latter, as well as improvements in telecommunications infrastructure. Larger firms highlight the importance of investments in the digital and professional skills of younger people entering the workforce.

Looking to the future

The nature of the Covid-19 crisis appears to have accelerated certain types of innovation in a way that previous crises might not have done. Our results highlight a number of positive messages: firms that have been forced to adopt innovations during the pandemic expect these to persist after the crisis, to have a positive impact on firm performance and to augment productivity, without substituting workers.

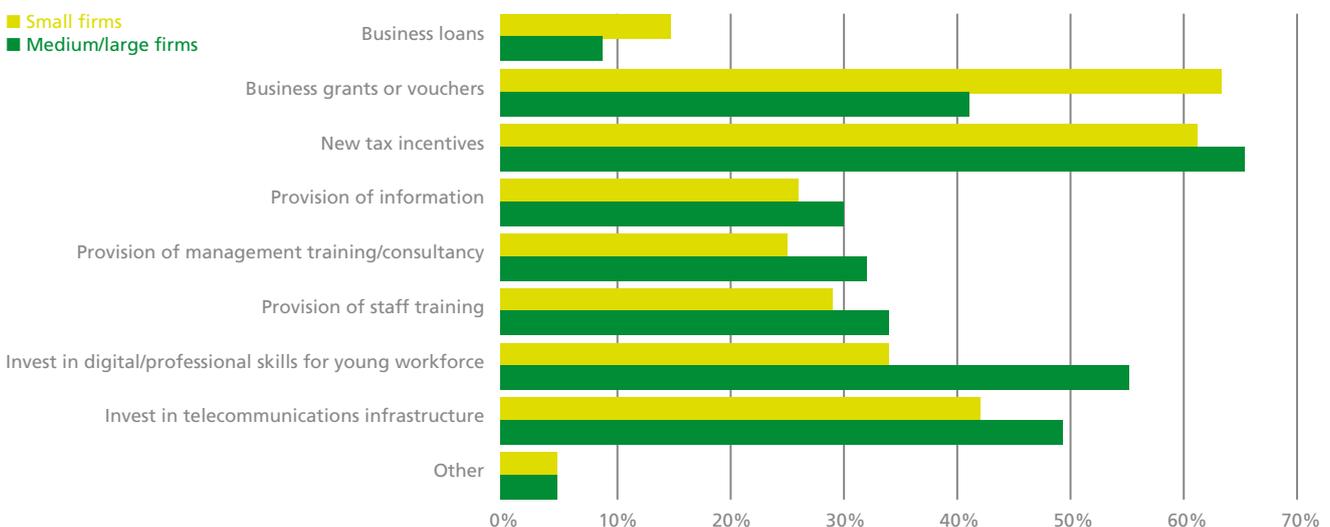
This article summarises ‘The Business Response to Covid-19: The CEP-CBI Survey on Technology Adoption’ by Capucine Riom and Anna Valero, CEP Covid-19 Analysis No. 9 (<http://cep.lse.ac.uk/pubs/download/cepcovid-19-009.pdf>).

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London-based businesses are more likely to have adopted digital technologies

Will these innovation activities indeed lead to higher productivity, business growth and hence increased employment? Will businesses continue to seek out and adopt new technologies and practices during the next phase of the Covid-19 crisis and beyond? We will investigate these questions further in our survey and analysis of secondary data one year on.

Figure 5:
Potential new government assistance schemes for adopting new technologies, capabilities or practices



Notes: N=346 (firms that responded to this question). Firms could select more than one option, so the bars do not sum to 100%.